

Notice of Allowability

Application No.

10/713,036

Examiner

John S. Chu

Applicant(s)

HAGIWARA ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 5/9/06.
2. ☒ The allowed claim(s) is/are ^{3,4}10-13, 17 and 19-43.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 08/229,628.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

REASONS FOR ALLOWANCE

1. The following is an examiner's statement of reasons for allowance: The claimed invention is drawn to the following;

10. (Previously presented) A photosensitive resin composition which comprises (1) a polyimide precursor produced using an oxydiphthalic acid or acid anhydride thereof and at least one diamine as reactants for forming the polyimide precursor, wherein said at least one diamine consists of at least one diamine selected from the group consisting of diaminodiphenyl ether, diaminodiphenyl sulfone, metaphenylene diamine, p-phenylenediamine, p-xylylenediamine, diaminonaphthalene, dimethylbenzidine, dimethoxybenzidine, diaminodiphenylmethane, diaminodiphenylsulfide, benzophenonediamine, bis((aminophenoxy) phenyl)sulfone, hexafluoro-bis(aminophenyl)propane, bis((aminophenoxy)phenyl)propane, dimethyl-diaminophenyl-methane, tetramethyl-diaminodiphenylmethane, bis((aminophenoxy)phenyl) sulfone, bis(aminophenyl)propane and diaminopolysiloxane, (2) an addition-polymerizable compound, and (3) a photoinitiator, and which is adapted to be exposed and developed using an i-line stepper which uses monochromatic light, the polyimide precursor being such that a 20 μm thick film thereof has a transmittance, at 365nm, of at least 40%.

The inventive step is the recited polyimide precursor produced by the oxyphthalic acid or acid anhydride and at least one diamine selected from the group consisting of the listed diamines in claim 10. The current rejection over RIEDIKER et al is **withdrawn** in view of the comparative evidence that is in the specification wherein the polyamic acid esters made from

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pyromellitic acid anhydride as seen in Comparative examples 1 and 2 of TABLE 2 show inferior film remaining ratio of 65% and 58% as compared to the inventive composition showing 94% to 98%. In addition, the compositions with the polyamic acid pyromellitic acid anhydride fail to meet the claimed transmittance as claimed for the 20 μm thick film a 365 nm.

Newly cited reference to SIMMONS, III (5,399,655) discloses positive working compositions comprising polyamic acid polymers having acid labile groups. The reference lacks the claimed addition-polymerizable compound and photoinitiator in the composition. Likewise, TUNNEY et al (5,122,436) lacks the use of an oxyphthalic dianhydride compound in a working example and any comparative evidence as seen in the specification would overcome a *prima facie* case of obviousness.

Based on the comparative evidence of record in the specification, any *prima facie* case of obviousness is overcome and accordingly RIEDIKER et al is **withdrawn** and claims 3, 4, 10-13, 17 and 19-43 are seen as allowable and passed to issue.

2. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

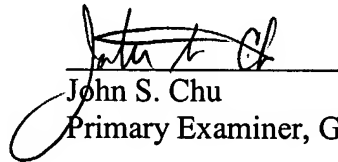
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Chu whose telephone number is (571) 272-1329. The examiner can normally be reached on Monday - Friday from 9:30 am to 6:00 pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Cynthia Kelly, can be reached on (571) 272-1526

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The fax phone number for the USPTO is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PMR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


John S. Chu
Primary Examiner, Group 1700

J.Chu
July 19, 2006